In re Patent Application of:
CANTONI ET AL.
Serial No. **09/919,725**
Filed: **JULY 31, 2001**

In the Claims:

Claims 1-14 (cancelled)

Claim 15 (cancelled)

Claim 16 (cancelled)

Claim 17 (currently amended) ~~A method as claimed in claim 15,~~ A method of transmitting variable length messages on a network from a source to a destination, said method comprising

segmenting each message into a plurality of fixed length slots, each of which slots includes a header field and a message segment,

providing a source identifier field in the header field of each slot, said source identifier field including a source identifier code that is uniquely associated with the message to be transmitted,

providing a type field in the header of each slot,

coding into the type field, a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message,

transmitting the slots on the network, and

controlling the reassembly of received slots at the destination in accordance with said source identifier code, the first code, the second code, and the third code and further comprising

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transmitting a destination address field in the message segment of the first slot of the message, and

checking a destination address field associated with the message, for a match with an address associated with the destination.

Claim 18 (currently amended) ~~A method as claimed in claim 15,~~ A method of transmitting variable length messages on a network from a source to a destination, said method comprising

segmenting each message into a plurality of fixed length slots, each of which slots includes a header field and a message segment,

providing a source identifier field in the header field of each slot, said source identifier field including a source identifier code that is uniquely associated with the message to be transmitted,

providing a type field in the header of each slot,

coding into the type field, a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message,

transmitting the slots on the network, and

controlling the reassembly of received slots at the destination in accordance with said source identifier code, the first code, the second code, and the third code, and further comprising

storing message segments associated with a single message in a buffer.

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Claim 19 (previously amended) A method as claimed in claim 18 further comprising providing the source identifier code to a comparator in response to detection of said first code at said destination, and

in response to detection of the second code associated with a subsequently received slot providing the source identifier thereof to the comparator to check for a match, and

storing the message segment of the subsequently received slot in said buffer in response to detection of a match.

Claim 20 (previously amended) A method as claimed in claim 19, further comprising outputting the reassembled slots in the buffer from the buffer as a reassembled message in response to detection of said third code.

Claim 21 (currently amended) ~~A method as claimed in claimed 15,~~ A method of transmitting variable length messages on a network from a source to a destination, said method comprising

segmenting each message into a plurality of fixed length slots, each of which slots includes a header field and a message segment,

providing a source identifier field in the header field of each slot, said source identifier field including a source identifier code that is uniquely associated with the message to be transmitted,

providing a type field in the header of each slot,

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coding into the type field, a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message,

transmitting the slots on the network, and

controlling the reassembly of received slots at the destination in accordance with said source identifier code, the first code, the second code, and the third code, and further comprising

coding, into the type field, a fourth code representing a single segment message, and

if said fourth code is detected in a slot received at the destination, storing the message segment thereof in a single segment buffer.

Claim 22 (previously amended) A method as claimed in claim 20, further comprising providing multiple comparators and buffers at the destination so as to enable simultaneous receipt of a plurality of messages, each having its own source identifier code, and

storing the message segments of each message in respective buffers.

Claim 23 (previously amended) Apparatus for transmitting variable length messages on a network from a source to a destination in fixed length slots, said apparatus including;

a segmentation machine for segmenting the messages into fixed length slots, each of which includes a header field and

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a message segment, said segmentation machine including coding means

for providing a source identifier field in the header of each slot, said source identifier field including a source identifier code that is uniquely associated with the message to be transmitted, and

for providing a type field in the header field of each slot, and

for providing a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine located, in use, at the destination, said reassembly machine including control means for controlling reassembly of the slots in accordance with respective source identifier codes of the slots, said control means being responsive to said source identifier code, said first code, said second code, and said third code.

Claim 24 (cancelled)

Claim 25 (previously amended) Apparatus as claimed in claim 23 wherein the message includes a destination address field and wherein the segmentation machine is arranged to transmit the destination address field in the message segment of the first slot of the message.

Claim 26 (cancelled)

Claim 27 (original) Apparatus for transmitting variable-length messages on a network from a source having a source address to a destination having a destination address in fixed length slots, said apparatus including:

a segmentation machine for segmenting each message into a plurality of fixed length slots including a first slot, continuing slots, and a last slot, each of said slots including a header field that includes a source identifier field, the source identifier field being substantially shorter than said destination address,

and a message segment;

coding means for providing the source identifier field with a source identifier code that is uniquely associated with the message to be transmitted for providing a type field in the header field of each slot, and for providing a code selected from a first code, a second code, and a third code representing, respectively, a beginning of a message, a continuation of a message and an end of a message; and

a reassembly machine located, in use, at the destination, said reassembly machine including control means for controlling reassembly of slots in accordance with respective source identifier codes, the first code, the second code, and the third code of the slots.

Claim 28 (cancelled)

Claim 29 (cancelled)

Claim 30 (currently amended) ~~The method as claimed in claim 29,~~ A method for the connection-oriented transfer of variable-length messages in fixed-length slots from a source node having a source address to a destination node having a destination address, the method comprising:

segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots and a last slot, each of the slots including a header field and a message segment;

providing, in the header field of each of the slots, a source identifier code associated with the message,

providing a type field for holding a code in the header of each slot,

coding into the type field, a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message,

transmitting the slots from the source node; and

controlling reassembly of the message on the basis of information in the header field of slots received at the destination node;

storing, in a buffer at the destination node, message segments associated with a single message, and further comprising

providing, to a comparator, the source identifier code of the first slot received at the destination node;

providing, to the comparator, the source identifier code of each subsequently received slot; and

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storing the message segment of the subsequently received slot in the buffer in response to an occurrence of a match between the source identifier code of the first slot and the source identifier code of subsequent slots.

Claim 31 (previously amended) The method as claimed in claim 30, further comprising outputting a reassembled message from the buffer in response to detection of the third code.

Claim 32 (previously amended) The method as claimed in claim 30, further comprising providing multiple comparators and buffers at the destination node to enable simultaneous receipt of a plurality of messages, each having its own source identifier code, and

storing message segments from each message in a separate buffer.

Claim 33 (cancelled)

Claim 34 (~~previously~~ amended) ~~The apparatus as claimed in claim 33~~ An apparatus for the connection-oriented transfer of variable-length messages in fixed-length slots from a source node, having a source address, to a destination node, having a destination address, the apparatus comprising:

a segmentation machine for segmenting each message into a plurality of fixed-length slots including a first slot, continuing slots, and a last slot, each of the fixed-length slots including a header field, and a message segment, the

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segmentation machine being located, in use, at the source node;

a coder for providing, in the header field of each slot,

a source identifier field for holding a source identifier code associated with the message to be transmitted, and

a type field, for holding a code selected from a first code, a second code, and a third code, respectively representing a beginning of a message, a continuation of a message, and an end of a message, and

a reassembly machine for controlling reassembly of slots into the message in accordance with information in the header field, the reassembly machine being located, in use, at the destination node

wherein the reassembly machine further comprises a selector for checking the third code and for providing source identifier codes to ~~the~~ a comparator for comparison with subsequently received source identifier codes.

Claim 35 (previously amended) The apparatus as claimed in claim 34, wherein the reassembly machine further comprises a plurality of comparators for enabling concurrent receipt of slots associated with different messages.

Claim 36 (previously amended) The apparatus as claimed in claim 35, further comprising means for providing source identifier codes of received slots to the plurality of comparators, thereby enabling the comparators to match slots having the same source identifier codes.

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Claim 37 (previously amended) The apparatus as claimed in claim 36, further comprising:

a plurality of buffers for the message segments of the slots, and

a buffer selector circuit for selecting a particular buffer for receipt of all message segments of slots having the same source identifier code.

Claim 38 (currently amended) The apparatus as claimed in claim 34, wherein <u>the reassembly machine comprises a controller and</u> the controller is configured to output a reassembled message from the buffer in response to detection of a third code, the reassembled message being associated with the source identifier code of the slot containing the detected third code.

Claim 39 (cancelled)

Claim 40 (previously amended) The apparatus of claim 23 in which the source identifier code is a label which enables the logical association of all segments belonging to said message and which enables them to be reassembled into the original message.

Claim 41 (cancelled)

Claim 42 (cancelled)

Claim 43 (cancelled)

Claim 44 (cancelled)

Claim 45 (previously amended) A method of
transmitting variable length messages on a network to a
destination having a destination address, said method
including the steps of:

segmenting each message into a plurality of fixed length
slots including a first slot, continuing slots, and a last
slot, each of said slots including a header field, which
includes a source identifier field which is substantially
shorter than said destination address, and a message segment;

providing a source identifier code in the source identifier
field, each source identifier code being associated with the
message to be transmitted;

entering said destination address in the message segment of
said first slot;

transmitting the slots on the network; and

controlling reassembly of slots in accordance with the
source identifier code.

Claim 46 (previously amended) Apparatus for
transmitting variable length messages on a network to a
destination, said apparatus including:

a segmentation machine segmenting each message into a
plurality of fixed length slots including a first slot,
continuing slots, and a last slot, each of said slots

including a header field which includes a source identifier field and a message segment;

said segmentation machine providing a source identifier code in the source identifier field, each source identifier code being associated with the message to be transmitted, and entering said destination address in the message segment of said first slot;

a transmitter transmitting the slots on the network; and

a reassembly machine controlling reassembly of slots in accordance with the source identifier codes.

Claim 47 (cancelled)

Claim 48 (previously amended) The apparatus of claim 23 in which the coding means provides each of the first code, the second code, and the third code in the headers of respective slots associated with a message.

Claim 49 (cancelled)

Claim 50 (previously amended) The apparatus of claim 27 in which the coding means provides each of the first code, the second code, and the third code in the headers of slots associated with a message.

Claim 51 (cancelled)

Claim 52 (cancelled)

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Claim 53 (cancelled)

Claim 54 (cancelled)

Claim 55 (cancelled)

Claim 56 (cancelled)

Claim 57 (cancelled)

Claim 58 (cancelled)

Claim 59 (cancelled)

Claim 60 (cancelled)

Claim 61 (cancelled)

Claim 62 (cancelled)

Claim 63 (cancelled)

Claim 64 (cancelled)

Claim 65 (cancelled)

Claim 66 (cancelled)

Claim 67 (cancelled)

Claim 68 (cancelled)

Claim 69 (cancelled)

Claim 70 (cancelled)